

SEQUENCE LISTING

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 ICAgen, Inc.

<120> BK Beta Subunits of Slo Family Potassium Channels

<130> 018512-002030US

<140> US 09/914,053

<141> 2001-08-21

<150> US 60/121,224

<151> 1999-02-23

<150> US 60/163,367

<151> 1999-11-03

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<160> 19

<170> PatentIn Ver. 2.1

<210> 1

<211> 257

<212> PRT

<213> Homo sapiens

<220>

<223> BK beta 2

<400> 1

Met	Thr	Ala	Phe	Pro	Ala	Ser	Gly	Lys	Lys	Arg	Glu	Thr	Asp	Tyr	Ser
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Asp	Gly	Asp	Pro	Leu	Asp	Val	His	Lys	Arg	Leu	Pro	Ser	Ser	Thr	Gly
			20					25					30		

Glu	Asp	Arg	Ala	Val	Met	Leu	Gly	Phe	Ala	Met	Met	Gly	Phe	Ser	Val
		35					40					45			

Leu	Met	Phe	Phe	Leu	Leu	Gly	Thr	Thr	Ile	Leu	Lys	Pro	Phe	Met	Leu
	50					55					60				

Ser	Ile	Gln	Arg	Glu	Glu	Ser	Thr	Cys	Thr	Ala	Ile	His	Thr	Asp	Ile
65					70					75					80

Met	Asp	Asp	Trp	Leu	Asp	Cys	Ala	Phe	Thr	Cys	Gly	Val	His	Cys	His
				85					90					95	

Gly	Gln	Gly	Lys	Tyr	Pro	Cys	Leu	Gln	Val	Phe	Val	Asn	Leu	Ser	His
			100					105					110		

Pro	Gly	Gln	Lys	Ala	Leu	Leu	His	Tyr	Asn	Glu	Glu	Ala	Val	Gln	Ile
			115				120					125			

Asn Pro Lys Cys Phe Tyr Thr Pro Lys Cys His Gln Asp Arg Asn Asp
 130 135 140
 Leu Leu Asn Ser Ala Leu Asp Ile Lys Glu Phe Phe Asp His Lys Asn
 145 150 155 160
 Gly Thr Pro Phe Ser Cys Phe Tyr Ser Pro Ala Ser Gln Ser Glu Asp
 165 170 175
 Val Ile Leu Ile Lys Lys Tyr Asp Gln Met Ala Ile Phe His Cys Leu
 180 185 190
 Phe Trp Pro Ser Leu Thr Leu Leu Gly Gly Ala Leu Ile Val Gly Met
 195 200 205
 Val Arg Leu Thr Gln His Leu Ser Leu Leu Cys Glu Lys Tyr Ser Thr
 210 215 220
 Val Val Arg Asp Glu Val Gly Gly Lys Val Pro Tyr Ile Glu Gln His
 225 230 235 240
 Gln Phe Lys Leu Cys Ile Met Arg Arg Ser Lys Gly Arg Ala Glu Lys
 245 250 255

Ser

<210> 2
 <211> 774
 <212> DNA
 <213> Homo sapiens

<220>
 <223> BK beta 2

<400> 2
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 tttgccatga tgggcttctc agtcctaagt ttcttcttgc tcggaacaac cattctaaag 180
 ccttttatgc tcagcattca gagagaagaa tcgacctgca ctgccatcca cacagatata 240
 atggacgact ggctggactg tgccttcacc tgtggtgtgc actgccacgg tcagggggaag 300
 taccctgtgc ttcagggtgtt tgtgaacctc agccatccag gtcagaaagc tctcctacat 360
 tataatgaag aggctgtcca gataaatccc aagtgccttt acacaccta gtgccaccaa 420
 gatagaaatg atttgc tcaa cagtgc tctg gacataaaag aattcttcga tcacaaaaat 480
 ggaaccccc tttcatgctt ctacagtcca gccagccaat ctgaagatgt cattcttata 540
 aaaaagtatg accaaatggc tatcttccac tgtttatattt ggccttcact gactctgcta 600
 ggtggtgccc tgattgttgg catggtgaga ttaacacaac acctgtcctt actgtgtgaa 660
 aaatatagca ctgtagtcag agatgaggta ggtggaaaag taccttatat agaacagcat 720
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<210> 3
 <211> 210
 <212> PRT
 <213> Homo sapiens

<220>
 <223> BK beta 3

<400> 3

Met Ala Lys Leu Arg Val Ala Tyr Glu Tyr Thr Glu Ala Glu Asp Lys
 1 5 10 15

Ser Ile Arg Leu Gly Leu Phe Leu Ile Ile Ser Gly Val Val Ser Leu
 20 25 30

Phe Ile Phe Gly Phe Cys Trp Leu Ser Pro Ala Leu Gln Asp Leu Gln
 35 40 45

Ala Thr Glu Ala Asn Cys Thr Val Leu Ser Val Gln Gln Ile Gly Glu
 50 55 60

Val Phe Glu Cys Thr Phe Thr Cys Gly Ala Asp Cys Arg Gly Thr Ser
 65 70 75 80

Gln Tyr Pro Cys Val Gln Val Tyr Val Asn Asn Ser Glu Ser Asn Ser
 85 90 95

Arg Ala Leu Leu His Ser Asp Glu His Gln Leu Leu Thr Asn Pro Lys
 100 105 110

Cys Ser Tyr Ile Pro Pro Cys Lys Arg Glu Asn Gln Lys Asn Leu Glu
 115 120 125

Ser Val Met Asn Trp Gln Gln Tyr Trp Lys Asp Glu Ile Gly Ser Gln
 130 135 140

Pro Phe Thr Cys Tyr Phe Asn Gln His Gln Arg Pro Asp Asp Val Leu
 145 150 155 160

Leu His Arg Thr His Asp Glu Ile Val Leu Leu His Cys Phe Leu Trp
 165 170 175

Pro Leu Val Thr Phe Val Val Gly Val Leu Ile Val Val Leu Thr Ile
 180 185 190

Cys Ala Lys Ser Leu Ala Val Lys Ala Glu Ala Met Lys Lys Arg Lys
 195 200 205

Phe Ser
 210

<210> 4

<211> 633

<212> DNA

<213> Homo sapiens

<220>

<223> BK beta 3

<400> 4

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 agtcccgcgc tgcaggatct gcaagccacg gaggccaatt gcacggtgct gtcgggtgcag 180
 cagatcggcg aggtgttcga gtgcaccttc acctgtggcg ccgactgcag gggcacctcg 240
 cagtaccctt gcgtccaggt ctacgtgaac aactctgagt ccaactctag ggcgctgctg 300
 cacagcgacg agcaccagct cctgaccaac cccaagtgtc cctatatccc tccctgtaag 360
 agagaaaatc agaagaattt ggaaagtgtc atgaattggc aacagtactg gaaagatgag 420
 attggttccc agccatttac ttgctatattt aatcaacatc aaagaccaga tgatgtgctt 480

ctgcatcgca ctcgatgatga gattgtcctc ctgcattgct tcctctggcc cctgggtgaca 540
 tttgtggtgg gcgttctcat tgtgggtcctg accatctgtg ccaagagctt ggcggtcaag 600
 gcggaagcca tgaagaagcg caagttctct taa 633

<210> 5

<211> 235

<212> PRT

<213> Homo sapiens

<220>

<223> BK beta 4

<400> 5

Met Ser Ile Trp Thr Ser Gly Arg Thr Ser Ser Ser Tyr Arg His Asp
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Glu Lys Arg Asn Ile Tyr Gln Lys Ile Arg Asp His Asp Leu Leu Asp
 20 25 30

Lys Arg Lys Thr Val Thr Ala Leu Lys Ala Gly Glu Asp Arg Ala Ile
 35 40 45

Leu Leu Gly Leu Ala Met Met Val Cys Ser Ile Met Met Tyr Phe Leu
 50 55 60

Leu Gly Ile Thr Leu Leu Arg Ser Tyr Met Gln Ser Val Trp Thr Glu
 65 70 75 80

Glu Ser Gln Cys Thr Leu Leu Asn Ala Ser Ile Thr Glu Thr Phe Asn
 85 90 95

Cys Ser Phe Ser Cys Gly Pro Asp Cys Trp Lys Leu Ser Gln Tyr Pro
 100 105 110

Cys Leu Gln Val Tyr Val Asn Leu Thr Ser Ser Gly Glu Lys Leu Leu
 115 120 125

Leu Tyr His Thr Glu Glu Thr Ile Lys Ile Asn Gln Lys Cys Ser Tyr
 130 135 140

Ile Pro Lys Cys Gly Lys Asn Phe Glu Glu Ser Met Ser Leu Val Asn
 145 150 155 160

Val Val Met Glu Asn Phe Arg Lys Tyr Gln His Phe Ser Cys Tyr Ser
 165 170 175

Asp Pro Glu Gly Asn Gln Lys Ser Val Ile Leu Thr Lys Leu Tyr Ser
 180 185 190

Ser Asn Val Leu Phe His Ser Leu Phe Trp Pro Thr Cys Met Met Ala
 195 200 205

Gly Gly Val Ala Ile Val Ala Met Val Lys Leu Thr Gln Tyr Leu Ser
 210 215 220

Leu Leu Cys Glu Arg Ile Gln Arg Ile Asn Arg
 225 230 235

<210> 6
 <211> 707
 <212> DNA
 <213> Homo sapiens

<220>
 <223> BK beta 4

<400> 6
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 aaggcaggag aggaccgagc tattctcctg ggactggcta tgatgggtgtg ctccatcatg 180
 atgtattttc tgctgggaat cacactcctg cgctcataca tgcagagcgt gtggaccgaa 240
 gagtctcaat gcaccttgct gaatgcgtcc atcacggaaa catttaaytg ctccttcagc 300
 tgtgggtccag actgctggaa actttctcag tacccttgcc tccaggtgta cgtaaacctg 360
 acttcttccg gggaaaagct cctcctctac cacacagaag agacaataaa aatcaatcag 420
 aagtgtcctt atatacctaa atgtggaaaa aattttgaag aatccatgtc cctgggtgaat 480
 gttgtcatgg aaaacttcag gaagtatcaa cacttctcct gctattctga cccagaagga 540
 aaccagaaga gtgttatcct aacmaaactc tacagttcca acgtgctgtt ccattcactc 600
 ttctggccaa cctgtatgat ggctgggggt gtggcaattg ttgccatggt gaaacttaca 660
 cagtacctct cctactatg tgagaggatc cacggatcaa tagataa 707

<210> 7
 <211> 27
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer to
 amplify BK beta 2

<400> 7
 atgacagcct ttctgcctc agggaag 27

<210> 8
 <211> 29
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer to
 amplify BK beta 2

<400> 8
 agatttctct gctcttcctt tgctcctcc 29

<210> 9
 <211> 24
 <212> DNA
 <213> Artificial Sequence

<220>
 <223> Description of Artificial Sequence:primer to
 amplify BK beta 2

<400> 9
 ggctggctgg actgtagaag catg 24

<210> 10
<211> 27
<212> DNA
<213> Artificial Sequence
<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 2

<400> 10
gaggctgtcc agataaatcc caagtgc

27

<210> 11
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 2

<400> 11
ggactgagaa gcccatcatg gcaaacc

27

<210> 12
<211> 24
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 3

<400> 12
atggcgaagc tccgggtggc ttac

24

<210> 13
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 3

<400> 13
ttaagagaac ttgcgcttct tcatgg

26

<210> 14
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 3

<400> 14
gatgtgcttc tgcacgcac tcatg 25

<210> 15
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 2

<400> 15
aagatgtcga tatggaccag tggcc 25

<210> 16
<211> 27
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 2

<400> 16
ttatctattg atccgttgga tcctctc 27

<210> 17
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 2

<400> 17
ctccttcagc tgtcctccag actgc 25

<210> 18
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Description of Artificial Sequence:primer to
amplify BK beta 4

<400> 18
gtcccagtag aatagctcgg tcctc 25

<210> 19
<211> 191
<212> PRT
<213> Homo sapiens

<220>

<223> BK beta 1

<400> 19

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Ile	Leu	Val	Thr	Thr	Val	Leu	Pro	Leu	Tyr	Gln	Lys	Ser	Val	Trp	Thr	35	40	45	
Gln	Glu	Ser	Lys	Cys	His	Leu	Ile	Glu	Thr	Asn	Ile	Arg	Asp	Gln	Glu	50	55	60	
Glu	Leu	Lys	Gly	Lys	Lys	Val	Pro	Gln	Tyr	Pro	Cys	Leu	Trp	Val	Asn	65	70	75	80
Val	Ser	Ala	Ala	Gly	Arg	Trp	Ala	Val	Leu	Tyr	His	Thr	Glu	Asp	Thr	85	90	95	
Arg	Asp	Gln	Asn	Gln	Gln	Cys	Ser	Tyr	Ile	Pro	Gly	Ser	Val	Asp	Asn	100	105	110	
Tyr	Gln	Thr	Ala	Arg	Ala	Asp	Val	Glu	Lys	Val	Arg	Ala	Lys	Phe	Gln	115	120	125	
Glu	Gln	Gln	Val	Phe	Tyr	Cys	Phe	Ser	Ala	Pro	Arg	Gly	Asn	Glu	Thr	130	135	140	
Ser	Val	Leu	Phe	Gln	Arg	Leu	Tyr	Gly	Pro	Gln	Ala	Leu	Leu	Phe	Ser	145	150	155	160
Leu	Phe	Trp	Pro	Thr	Phe	Leu	Leu	Thr	Gly	Gly	Leu	Leu	Ile	Ile	Ala	165	170	175	
Met	Val	Lys	Ser	Asn	Gln	Tyr	Leu	Ser	Ile	Leu	Ala	Ala	Gln	Lys	180	185	190		